SONY

SERVICE MANUAL

US Model
Canadian Model

January, 1986

SUPPLEMENT-1

Subject: Addition of control S terminal and related circuit

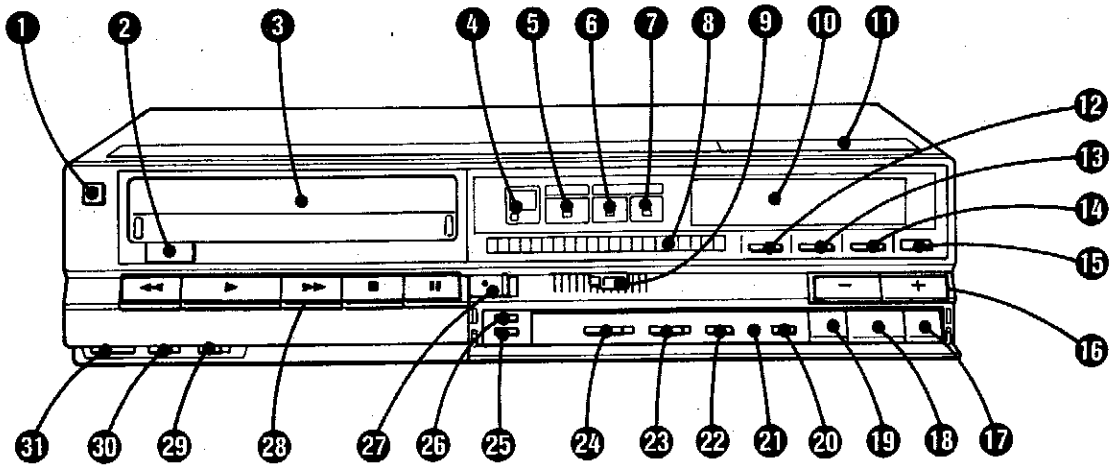
- A control S terminal has been added.
  This Supplement-1 contains the schematic diagram, printed wiring board and added parts list which are relative to the addition of control S terminal.
- File this supplement with the service manual.

MICROFILM

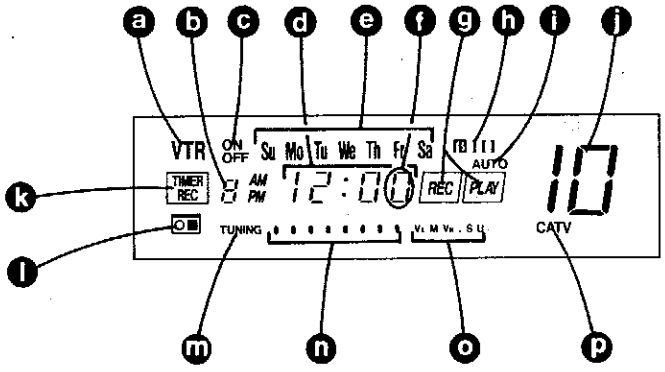
1. GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS

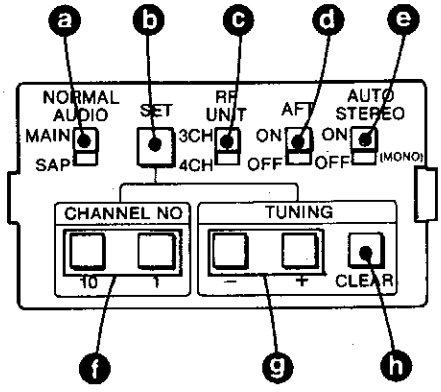
Front



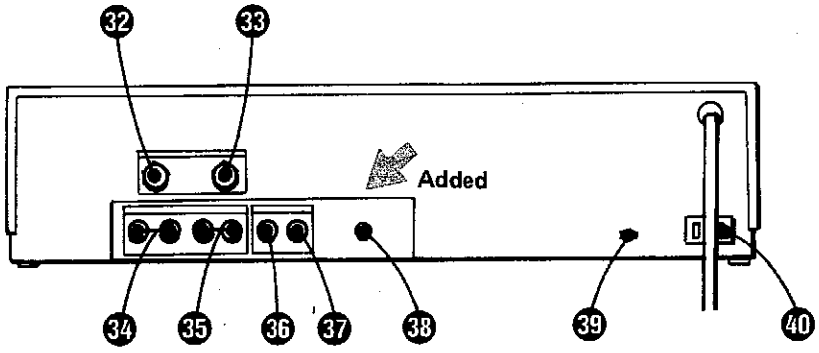
⑩ Display window



⑪ Tuning compartment



Rear



❶ POWER switch and indicator
Press to turn the power on. The indicator lights up. To turn the unit off, press the switch again.
The timer section will continue to operate and the time will be displayed even if the POWER switch is off, as long as the ac power cord is plugged into a working outlet.

❷ ⏏ EJECT button
Press this button to eject the cassette. In playback, rewind and fast-forward operations, if ⏏ EJECT is pressed, tape transportation will stop and the cassette will be ejected.

❸ Cassette compartment
Insert a cassette here. To eject the cassette press ⏏ EJECT.

❹ **Remote sensor**
Detects the infrared transmitting signal from the supplied Remote Commander.

❺ **Beta hi-fi indicator**
When recording with the BETA HI-FI switch at ON, this indicator lights up. When playing back a Beta hi-fi recorded tape, the indicator lights up regardless of the BETA HI-FI selector's position.

❻ **STEREO indicator**
This indicator lights up when a stereo broadcast is received with the AUTO STEREO switch set to ON.

❼ **SAP (Second Audio Program) indicator**
This indicator lights to show that the NORMAL AUDIO selector is set to SAP.

❽ **PEAK LEVEL METER**
This meter shows the peak input level of the right and left channels during Beta hi-fi recording. During playback, this meter shows the recorded level.

❾ **REC LEVEL control**
Adjust the recording level when the BETA HI-FI selector is set to ON. Usually set to 5 (green position). When you record sound from other audio equipment, adjust manually to the proper position to get the optimum result.

❿ **Display window**
ⓐ Indicates the VTR mode.
ⓑ Program position will change in numerical sequence when TIMER SET is pressed.
ⓒ Lights when timer-activated recording turn-on or turn off is being set.
ⓓ Time display and tape counter
ⓔ The day of the week indication
ⓕ Channel memory position to be selected while presetting channels.
ⓖ Indicates recording or playback mode.
ⓗ The tape speed selected is displayed.
ⓘ Lights during automatic playback and automatic stop.
ⓙ Channel display
ⓚ While setting a timer-activated recording, TIMER will appear. When TIMER REC ON/OFF or QUICK TIMER is pressed, TIMER REC will appear.
ⓛ Lights when a cassette is inside.
ⓜ Lights when SET in the tuning compartment is pressed for presetting channels.
ⓝ A sequence of dots show the speed and direction in which the tape is running. When a channel is being preset, the dots show the approximate location of the channel in the band.
ⓞ Band indications: When a channel is being pressed, the band in which the channel is being tuned will light up.
VL: VHF low, M: mid-band, VH•S: high and super band, U: UHF
ⓟ Cable TV channel is selected.

⓫ **Tuning compartment**

ⓐ **NORMAL AUDIO (MAIN/SAP) selector**
Select the sound to be recorded on the conventional audio track. Normally set to MAIN. If a Multichannel TV Sound broadcast is received, the MAIN sound will be recorded. To record SAP sound, set to SAP.

ⓑ **SET button**
Press this button to tune in a channel to be preset. The TUNING indication appears in the window. After presetting, press again to set to release.

ⓒ **RF UNIT selector**
Select the channel for the VCR program and the output from the VHF/UHF OUT connector. Set the selector to 3 CH or 4 CH, whichever is not active in your area.

ⓓ **AFT selector**
Normally set to ON. The automatic fine tuning circuit locks in and maintains a sharp picture. When the signal is weak on a particular channel, set to OFF.

ⓔ **AUTO STEREO switch**
Normally set to ON. A stereo broadcast will be received in stereo. When there is excessive noise in a stereo program due to a weak incoming signal, set the selector to OFF. The noise will be reduced but the sound will become monaural.

ⓕ **CHANNEL NO (number) buttons.**
Change the channel number displayed to match the channel received. Press "10" to change the tens digit, and "1" to change units digit.

ⓖ **TUNING buttons**
Press to tune in an active channel. Every time you press, a channel will be tuned in. The band indication, VL, M, VH•S or U, of the band being scanned to tune in a channel light up in the window.

ⓗ **CLEAR button**
Press to cancel the memory of a particular channel in order to skip the unused channel.

⓬ **CLOCK/COUNTER button**
Select the display mode, tape counter or the clock.

⓭ **CLEAR/RESET button**
Press the button to reset the time counter to "00 00" and also to clear the timer setting.

⓮ **TV/VTR button**
Press this button to view the program selected on the recorder. The VTR indication appears in the display window.
To view a different TV program than the one being recorded, press the button again so that the VTR indication disappears.
When you press ▶ PLAY, the VTR indication reappears.

⓯ **QUICK TIMER button**
Press to start the timer recording quickly. The recording time is selected in 30 minute intervals, from 0:30 to 5:00. Press this button as many times as required until the desired recording time is displayed.

⓰ **+/− buttons**
Press to select the channels and to set the clock or timer programs.

⓱ **TIMER REC ON/OFF button**
Press to activate the timer recording. To deactivate the timer recording (including quick timer recording), press again.

⓲ **NEXT button**
Press to advance to the next item to be set during clock or timer setting.

⓳ **TIMER SET button**
Press this button as the first step in setting or resetting timer recording.

⑳ **CHECK button**
Press to check the contents of the timer presettings.

㉑ **CLOCK button**
Press this button as the first step in setting the current time.

㉒ **Ⓑ II / Ⓑ III selector**
This selects the recording speed, Ⓑ II or Ⓑ III . The recording time of any given cassette in the Ⓑ III mode is 1.5 times that in the Ⓑ II mode.
The playback speed is automatically set regardless of this selector's position.

㉓ **MONITOR SELECT HI-FI/NORMAL selector**
Select the sound to be played back.
HI-FI: Normally set to this position. The sound recorded on the video track in Beta hi-fi will be heard.
NORMAL: To monitor the sound recorded on the conventional audio track.

㉔ **MONITOR SELECT STEREO/L/R switch**
Select the channel(s) of the Beta hi-fi sound to be played back.
STEREO: Usually set to this position. The stereo sound will be heard.
L: To monitor the L channel of a stereo program.
R: To monitor the R channel of a stereo program.

㉕ **SHARPNESS control**
Adjusts the sharpness of the picture if necessary.
Usually set the control at the center detent position.

㉖ **SUPER BETA switch**
Normally keep this switch ON to obtain high quality recording/playback picture.
Only if by setting this switch to "OFF", over-modulation in the playback of tapes recorded or played back on other VCRs seems to be eliminated, set this switch to "OFF".

㉗ **REC (record) button**
Slide to the right to start recording. The REC indication appears in the display window.

㉘ **Tape transport buttons**
◀◀ **REW (rewind) button:** Pressing this button during playback enables you to view a high-speed playback in reverse (Betascan).
▶ **PLAY button:** When ◀◀ REW is kept pressed and ▶ PLAY is pressed, the tape returns to the beginning or to the point where the tape counter indicates "0000" then automatically begins to play back. While the tape is played back, PLAY indication will appear in the window.
▶▶ **FF (fast-forward) button:** Pressing this button during playback enables you to view high-speed playback (Betascan).
■ **STOP button:** Press to stop the tape running.
When ◀◀ REW is kept pressed and ■ STOP is pressed, the tape returns and stops at the point where the tape counter indicates "0000".
A sequence of dots will disappear.
II **PAUSE/▶◀** STILL button: Press to stop the tape momentarily during recording or playback. A still picture will be seen during playback. Press again to release pause mode.

㉙ **MPX FILTER/PCM selector**
MPX FILTER OFF: Usually set to this position.
MPX FILTER ON: for recording FM broadcast programs (Only if your FM tuner has an internal MPX filter, set to OFF.)
PCM: for PCM recording
The setting of this switch is not necessary for TV recordings.

㉚ **INPUT SELECT switch**
Select the program to be recorded.
TUNER: for recording TV programs
LINE/PCM: for recording signals connected to VIDEO/PCM IN and LINE AUDIO IN.
LINE AUDIO: for recording sound from LINE AUDIO IN and picture of TV program on FM simulcast recording

㉛ **TRACKING control**
If streaks or snow appears in the playback of a cassette which has been recorded on another video cassette recorder, turn this knob to obtain the best possible picture. Return the control to the center position after viewing the cassette.
The center detent position provides the correct tracking for the cassettes recorded on this recorder.

Rear

㉜ **VHF/UHF IN connector (F-type)**
Connect the VHF and/or UHF antenna cable(s).

㉝ **VHF/UHF OUT connector (F-type)**
Connect to the VHF and/or UHF antenna terminal(s) of a TV receiver. The signal of a VCR program converted to channel 3 or 4 and the VHF/UHF TV signal will be supplied to the TV receiver.

㉞ **LINE AUDIO IN jacks (phono type)**
Connect the line output of a sound source such as a tape recorder, an amplifier, a tuner, or the audio output of another video cassette recorder.

㉟ **LINE AUDIO OUT jacks (phono type)**
Connect to the audio input of a color monitor, TV, another video cassette recorder, or connect to a stereo system.

㊱ **VIDEO/PCM IN jack (phono type)**
Connect to the video output of another video cassette recorder, camera adaptor, etc. For PCM recording, connect a PCM digital audio processor here.

㊲ **VIDEO/PCM OUT jack (phono type)**
Connect to the video input of a color monitor, TV or another video cassette recorder. For PCM playback, connect a PCM digital audio processor here.

㊳ **CONTROL S input jack (mini type)**
Connect to the CONTROL S output jack of other Sony products for various systematic operations.
When this jack is connected to the CONTROL S OUT (EDIT) jack of the Sony SL-HF900 video cassette recorder, automatic assemble editing operation of the SL-HF900 can be activated with this recorder.

㊴ **BETA HI-FI selector**
ON: Normally, set to this position. Recording will be done in Beta hi-fi. (A tape not recorded in Beta hi-fi will be played back conventionally.)
OFF: Set to this position when recording only in the conventional (not Beta hi-fi) system.

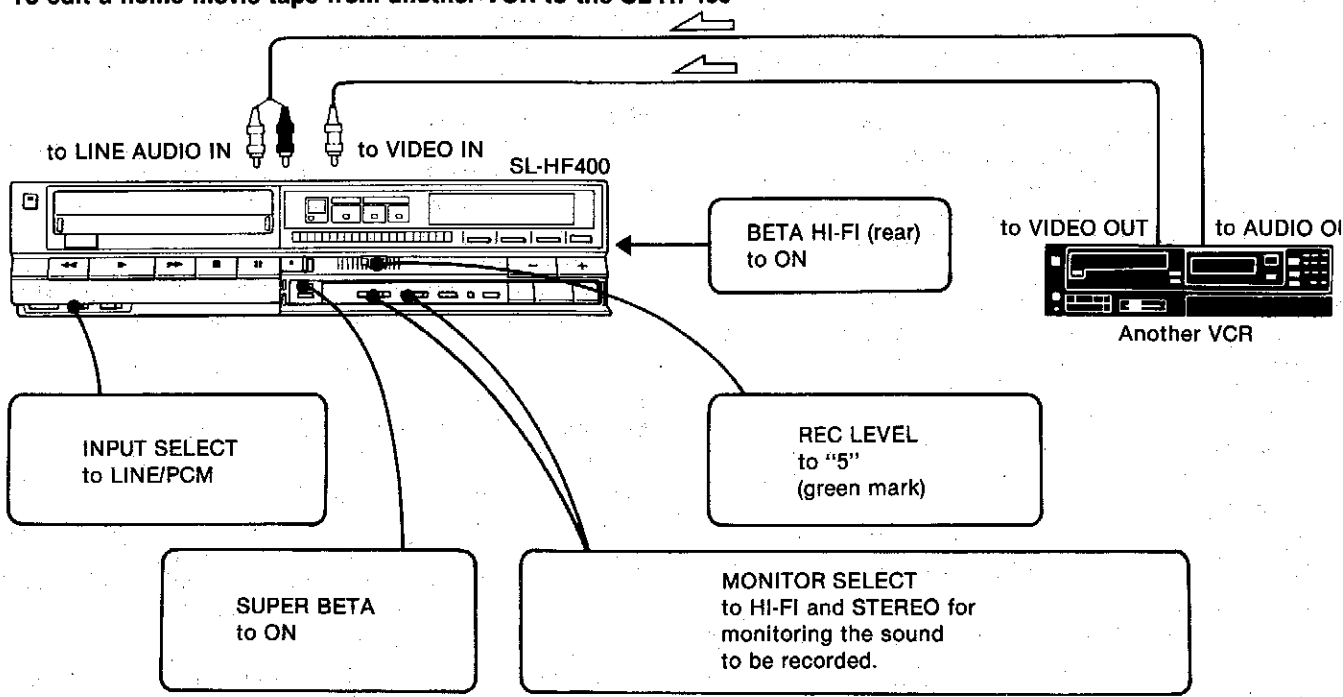
㊵ **AC OUTLET**
This unswitched outlet supplies ac power to video or audio equipment with power consumption under 400 watts.

: Added

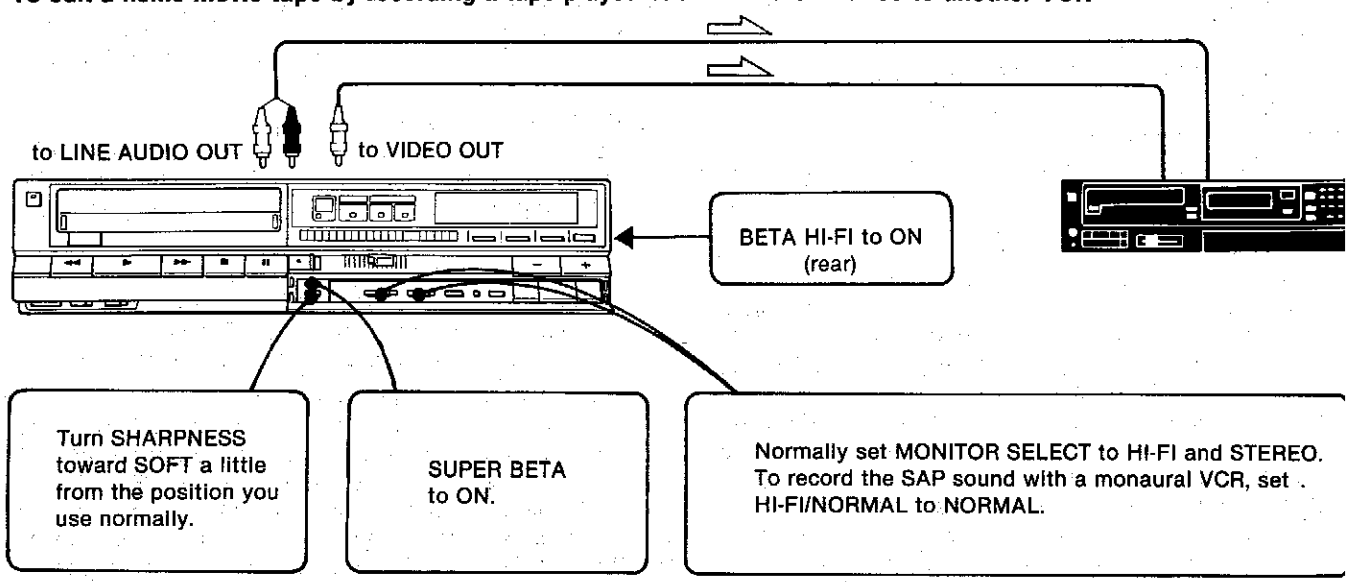
1-14. EDITING A TAPE

To edit a home movie tape, you will need two video cassette recorders.
Set the controls as shown below. To start recording, set the VCR for playback in the playback mode, then press the record button on the other VCR.

To edit a home movie tape from another VCR to the SL-HF400



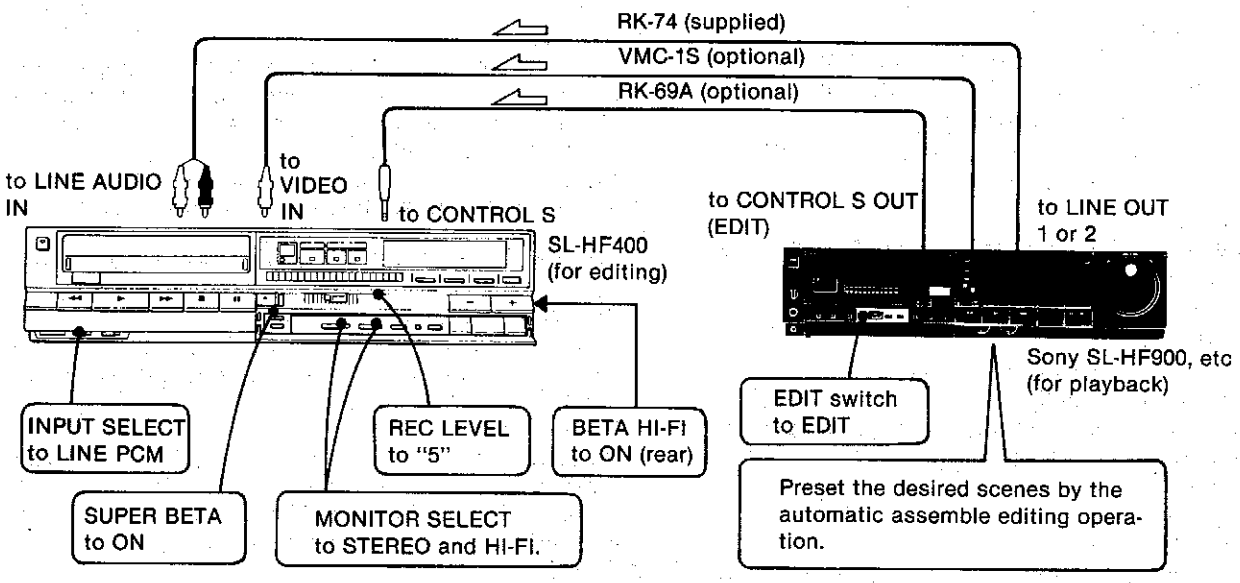
To edit a home movie tape by recording a tape played back on the SL-HF400 to another VCR



CAUTION
Television programs, films, video tapes and other materials may be copyrighted.
Unauthorized duplication of such material may be contary to the provisions of the copyright laws.

TO EDIT FROM A VCR EQUIPPED WITH THE CONTROL S (EDIT) OUTPUT

Only the particular scenes preset on the playback VCR will be edited (automatic assemble editing). Recording start/stop on the SL-HF400 can be activated in synchronization with playback start/stop on the playback VCR.



To start editing, set the SL-HF400 in recording pause mode and then follow the instruction manual of the playback VCR for the automatic assemble editing.

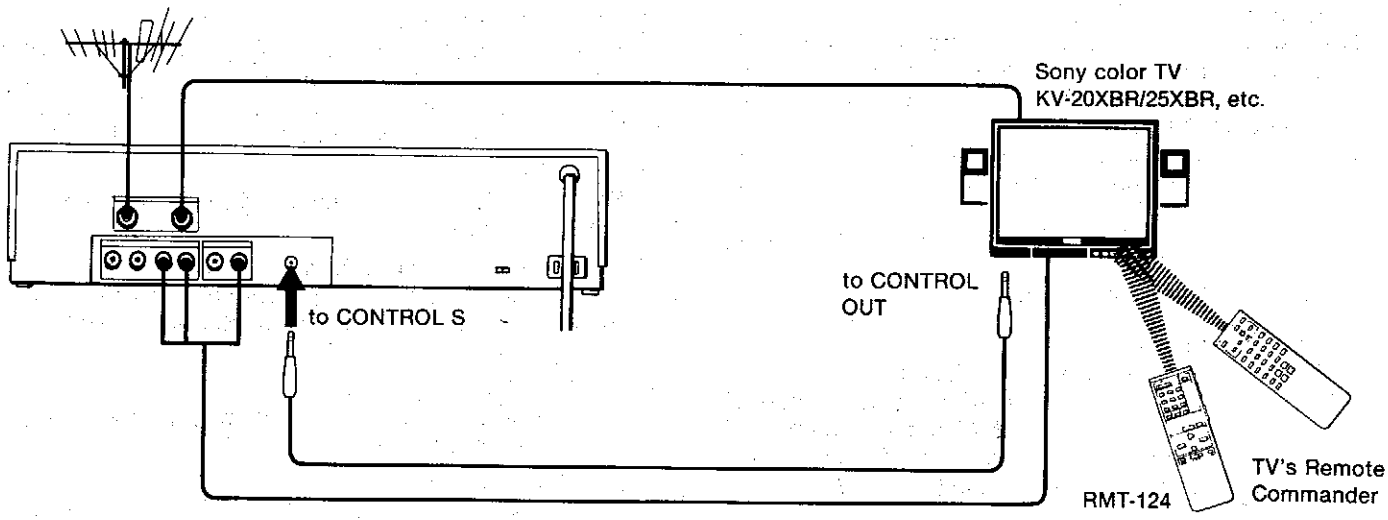
- The optional RM-E100 video editing controller allows easier editing between two VCRs.
- The required connecting cords may differ depending on VCRs. Refer to the instruction manual of the VCR.

Note

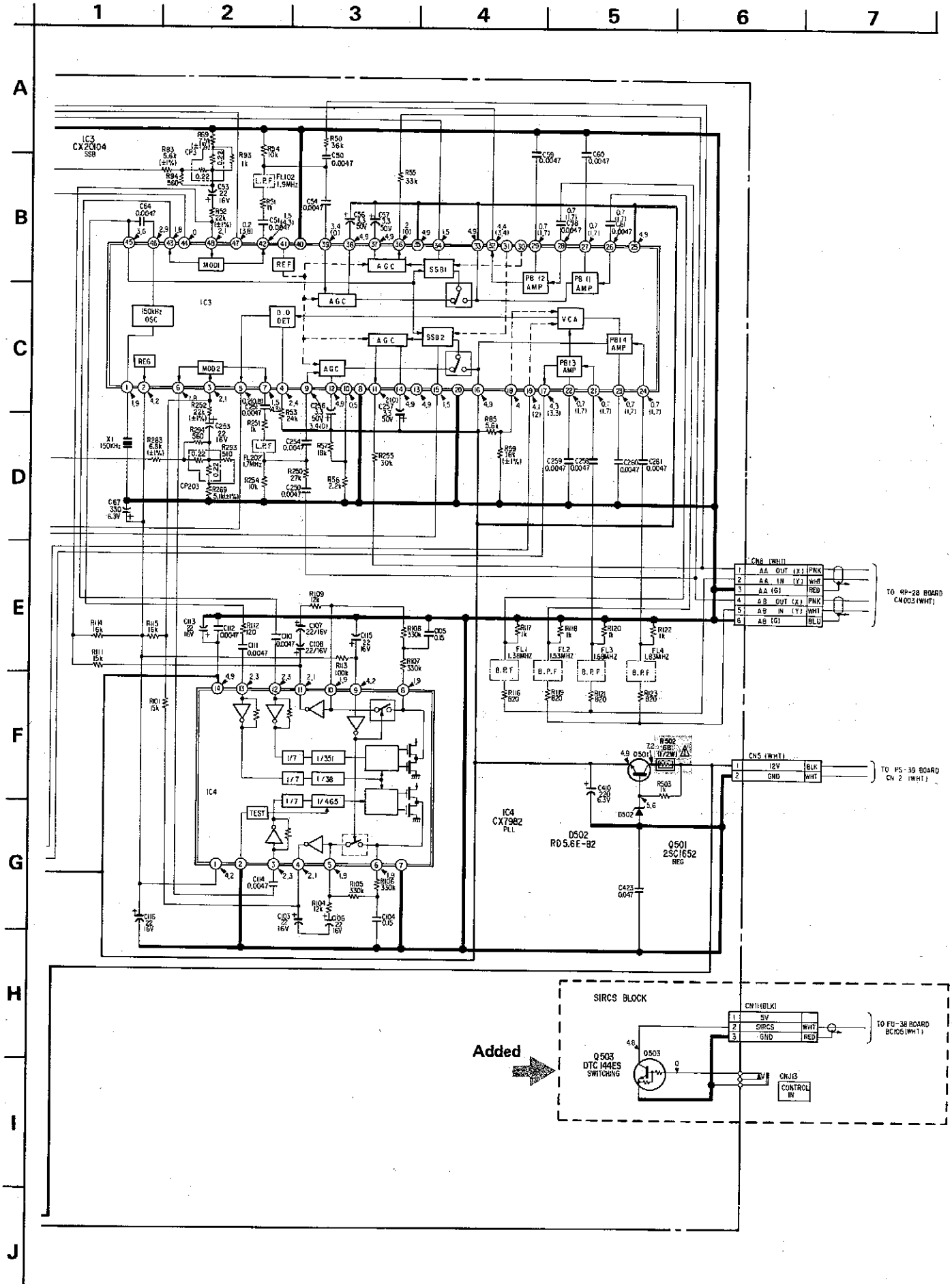
Avoid repetition of editing tapes, as the picture and tone quality will be impaired noticeably for newly edited tapes.

Use of the CONTROL S input jack

If this jack is connected to the CONTROL (S) OUT jack of a Sony color TV or TV tuner, this recorder can be controlled by pointing the supplied RMT-124 Remote Commander toward the remote sensor on the color TV or TV tuner.

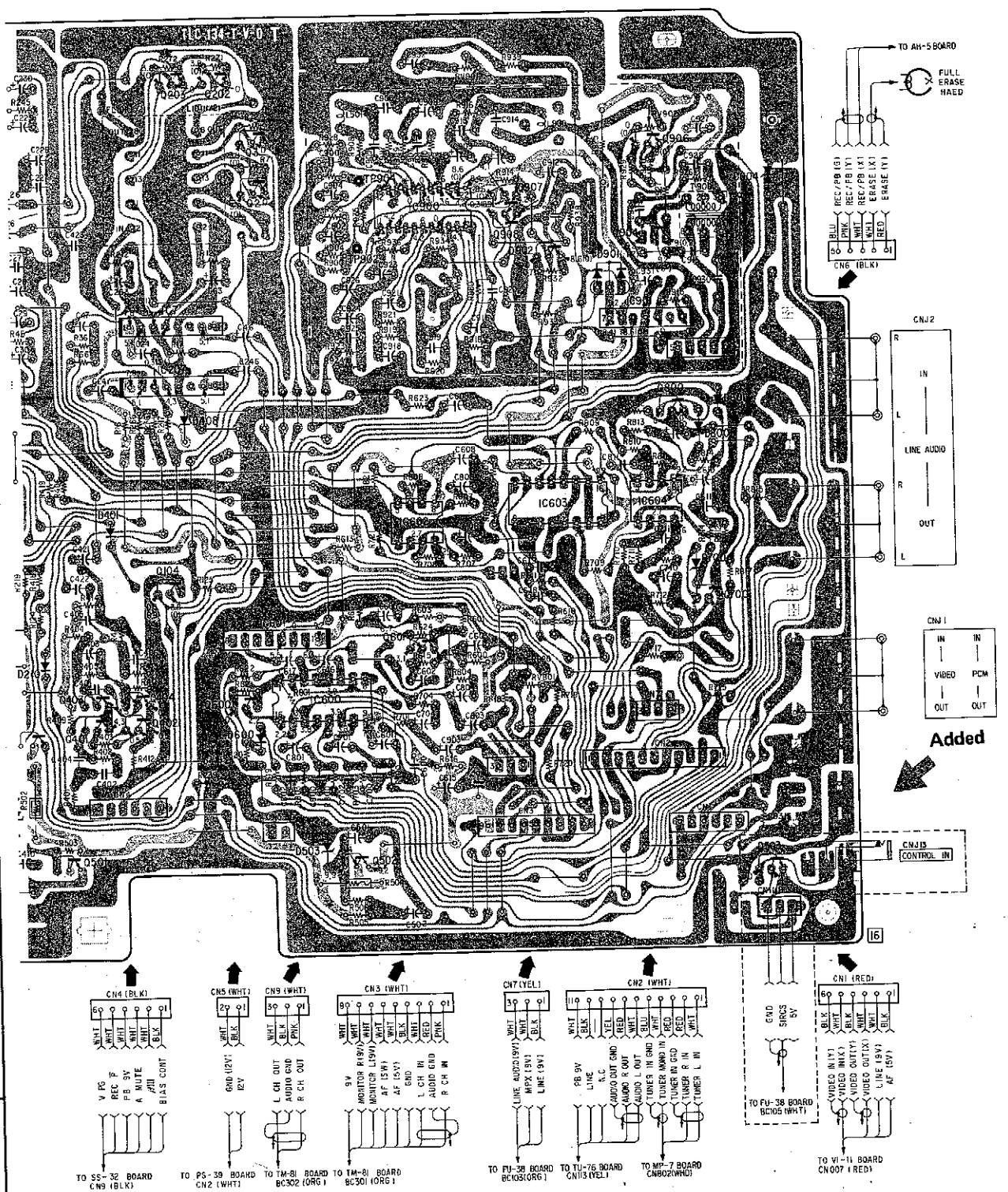


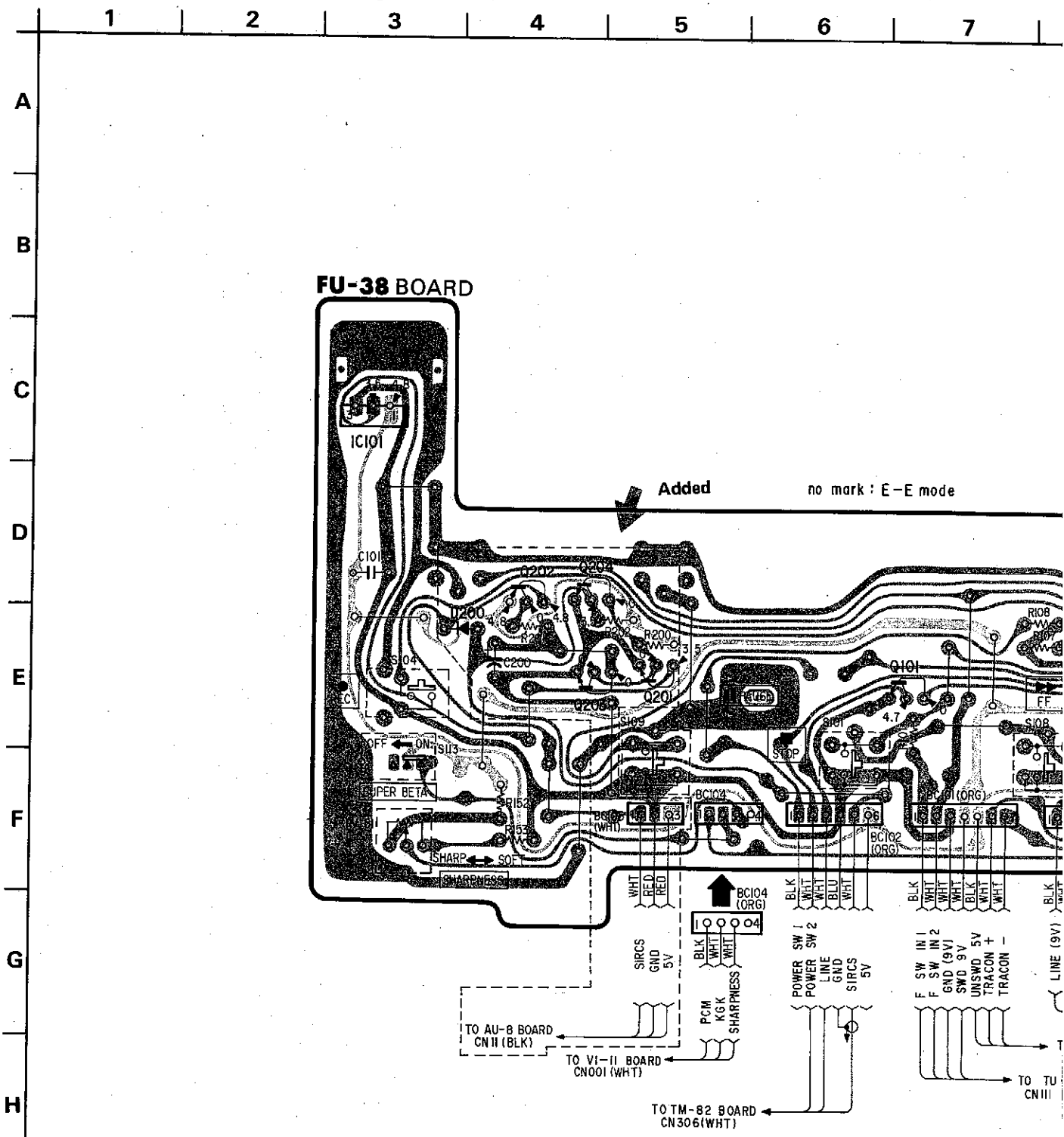
AU-8 BOARD SCHEMATIC DIAGRAM (Page 100)



U-8 PRINTED WIRING BOARD (Page 102 – 103)

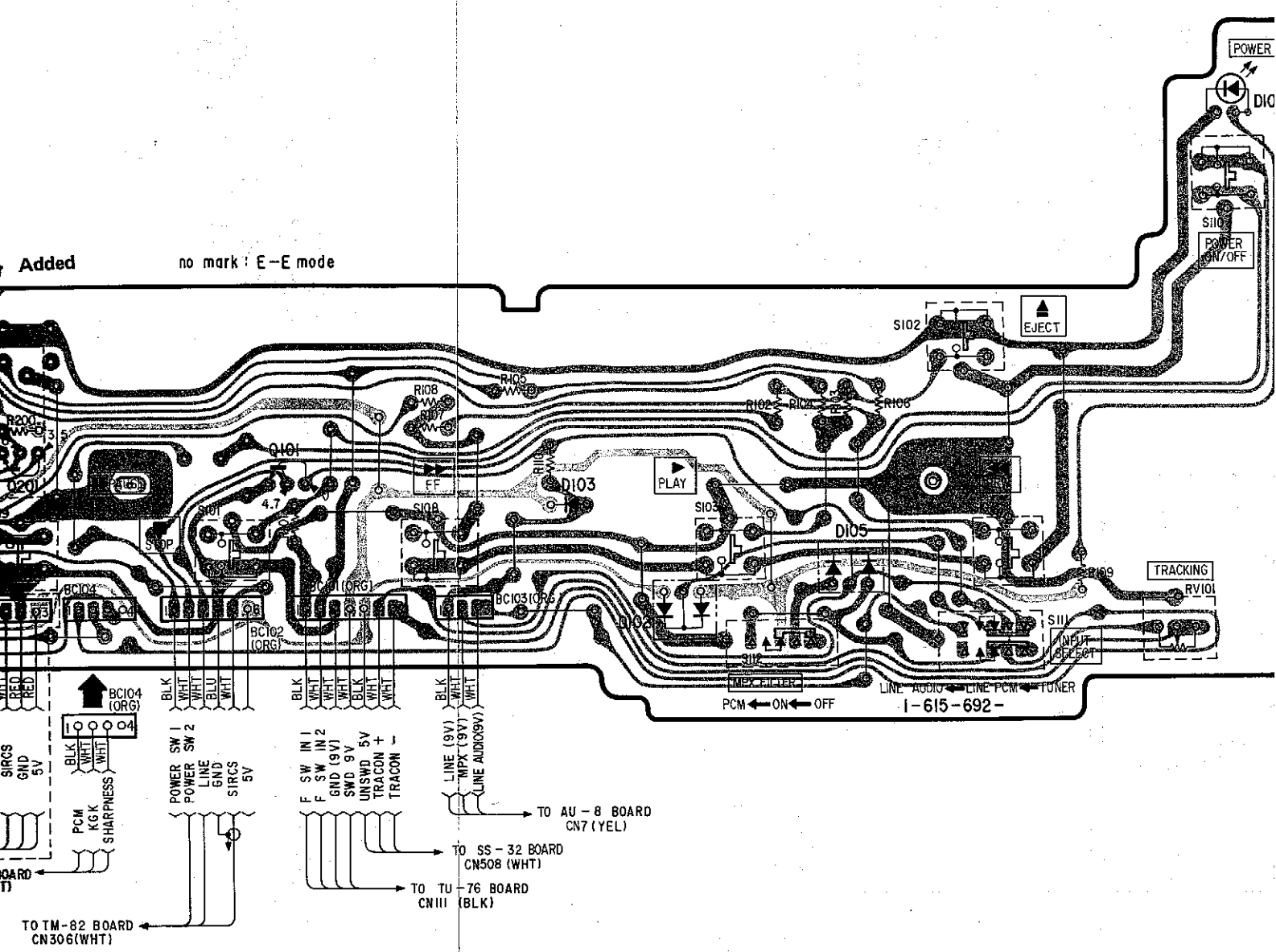
1 | 2 | 3 | 4 | 5 | 6 | 7

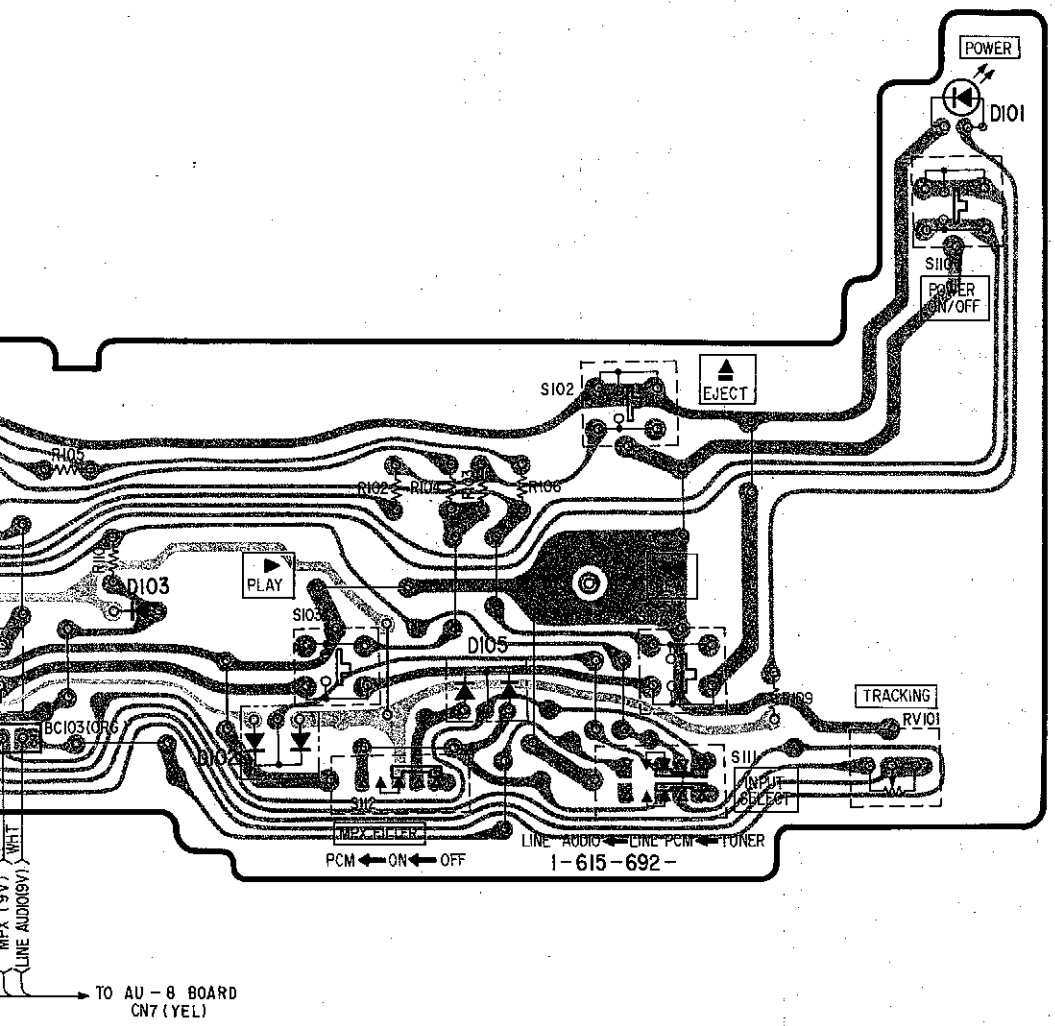


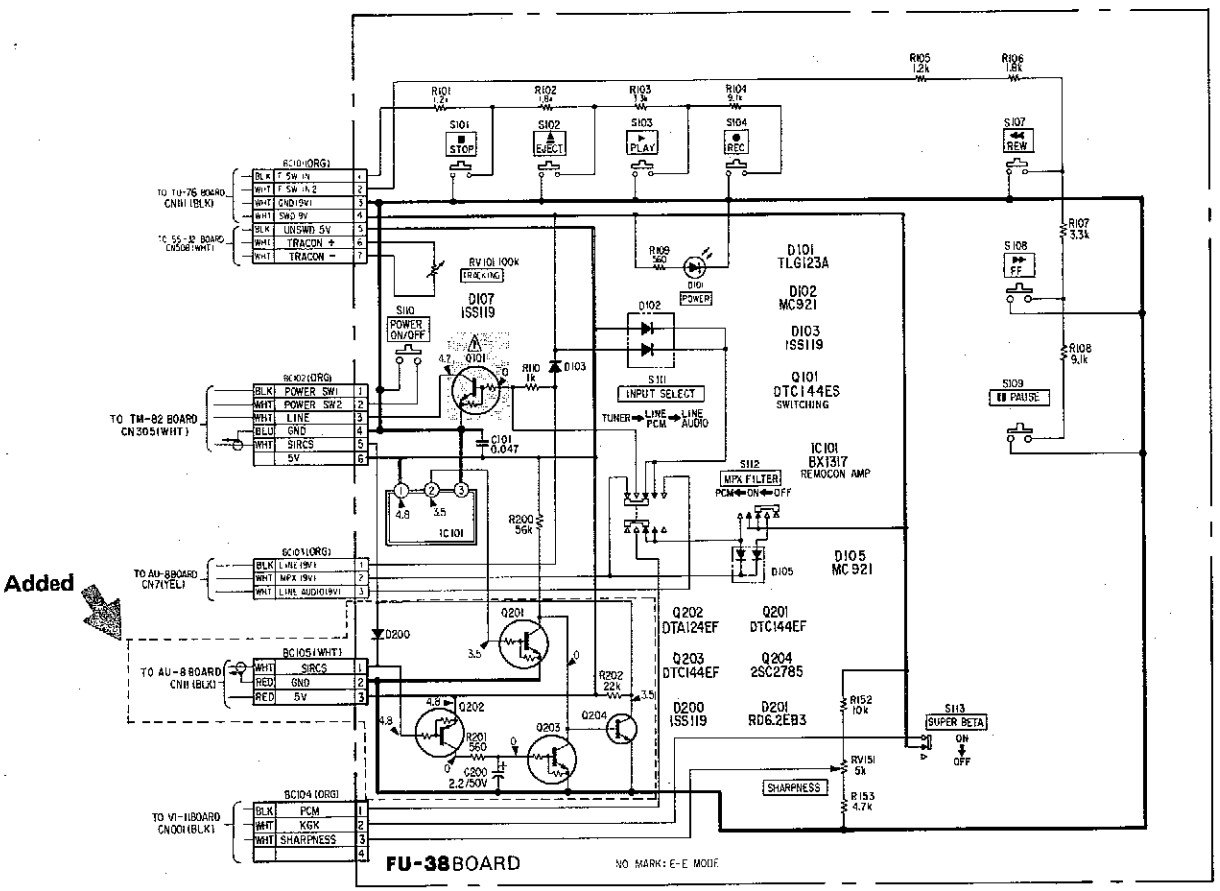

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
FU-38 BOARD
Added
no mark : E-E mode
IC101
C101
Q202
Q200
R200
C200
Q201
Q205
S104
S105
S101
S108
Q101
R108
R107
FF
STOP
SW
OFF
ON
S103
SUPER BETA
R152
R153
SHARP
SOFT
SHARPNESS
BC102
BC103
BC101 (ORG)
BC102 (ORG)
BC104 (ORG)
WHT
RED
RED
BLK
WHT
WHT
BLU
WHT
SIRCS
GND
5V
PCM
KGK
SHARPNESS
POWER SW 1
POWER SW 2
LINE
GND
SIRCS
5V
F SW IN 1
F SW IN 2
GND (9V)
SWD 9V
UNSWD 5V
TRACON +
TRACON –
LINE (9V)
TO AU-8 BOARD
CN11 (BLK)
TO VI-11 BOARD
CN001 (WHT)
TO TM-82 BOARD
CN306 (WHT)
TO TU
CN111

Added

no mark : E-E mode




POWER
D101
SI01
POWER ON/OFF
SI02
EJECT
R105
R102
R104
R106
D103
PLAY
SI03
D105
TRACKING
RV101
BC103(OR6)
D102
SI11
INPUT SELECT
SI12
OMPX FILTER
PCM ON OFF
LINE AUDIO LINE PCM TUNER
1-615-692-
13
TO AU-8 BOARD
CN7 (YEL)
SS-32 BOARD
CN508 (WHT)
-76 BOARD
(BLK)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
Added
FU-38BOARD
NO MARK: E-E MODE
STOP
EJECT
PLAY
REC
REW
FF
PAUSE
POWER ON/OFF
INPUT SELECT
MPX FILTER
SUPER BETA
SHARPNESS
TRACKING
D101 TLG123A
D102 MC921
D103 1SS119
Q101 DTC144ES
SWITCHING
IC101 BX1317
REMOCON AMP
D105 MC921
Q201 DTC144EF
Q202 DTA124EF
Q203 DTC144EF
Q204 2SC2785
D200 1SS119
D201 RD6.2EB3
TO TU-76 BOARD CN81 (BLK)
TO TM-82 BOARD CN305 (WHT)
TO AU-88OARD CN71 (ELI)
TO AU-88OARD CN11 (BLK)
TO VI-11BOARD CN001 (BLK)

6. ELECTRICAL PARTS LIST

Ref.No.	Part No.	Description			Remark
	*A-6713-225-A	AU-8 BOARD, COMPLETE **********			
		CONNECTOR			
CN011	*1-560-891-00	PIN, CONNECTOR 3P			
		JACK			
CNJ013	1-507-678-21	JACK			
		TRANSISTOR			
Q503	8-729-900-89	TRANSISTOR DTC144ES			
**********					
	*A-6717-395-B	FU-38 BOARD, COMPLETE **********			
		CAPACITOR			
C200	1-123-612-00	ELECT	2.2MF 20%	50V	
		DIODE			
D200	8-719-911-19	DIODE 1SS119			
		TRANSISTOR			
Q201	8-729-900-33	TRANSISTOR DTC144EF			
Q202	8-729-900-39	TRANSISTOR DTA124EF			
Q203	8-729-900-33	TRANSISTOR DTA144EF			
Q204	8-729-178-54	TRANSISTOR 2SC2785			
		RESISTOR			
R200	1-247-873-00	CARBON	56K 5%	1/6W	
R201	1-247-825-00	CARBON	560 5%	1/6W	
R202	1-247-863-00	CARBON	22K 5%	1/6W	

English
86A0978-1
Printed in Japan
© 1986